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(54) Title: FLUORINATED MONOMERS, FLUORINATED POLYMERS HAVING POLYCYCLIC GROUPS WITH FUSED 4-MEMBERED HETEROCYCLIC RINGS, USEFUL AS PHOTORESISTS, AND PROCESSES FOR MICROLITHOGRAPHY

(57) **Abstract:** The present invention provides novel fluorine-containing copolymers which comprise at least one fluorinated olefin, at least one polycyclic ethylenically unsaturated monomer with a fused 4-membered heterocyclic ring and, optionally, other components. The copolymers are useful for photoimaging compositions and, in particular, photoresist compositions (positive-working and/or negative-working) for imaging in the production of semiconductor devices. The copolymers are especially useful in photoresist compositions having high UV transparency (particularly at short wavelengths, e.g., 157 nm) which are useful as base resins in resists and potentially in many other applications.

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